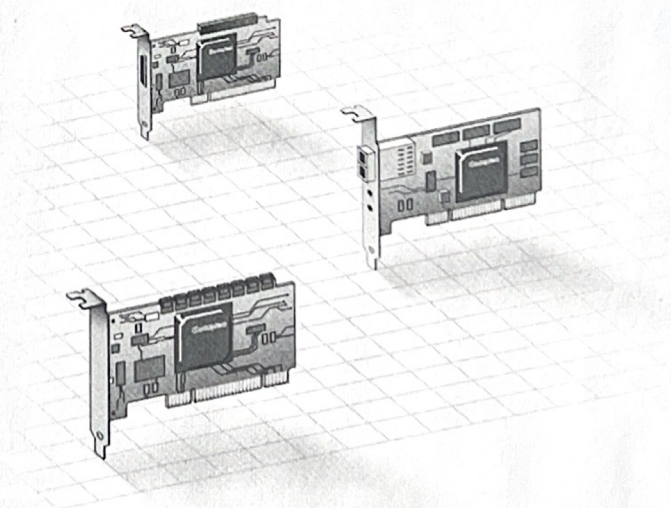# adaptec®

Adaptec SCSI Card 29320LPE
Quick Start Guide

Kurzanleitung zur Installation
Guide de démarrage rapide
Guida di avvio rapida
Guía de instalación rápida

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Adaptec SCSI Card 29320LPE
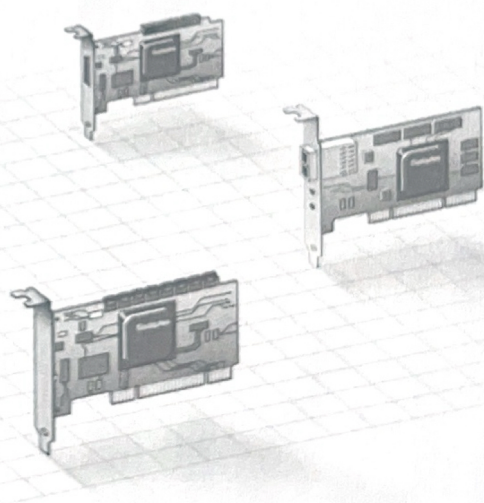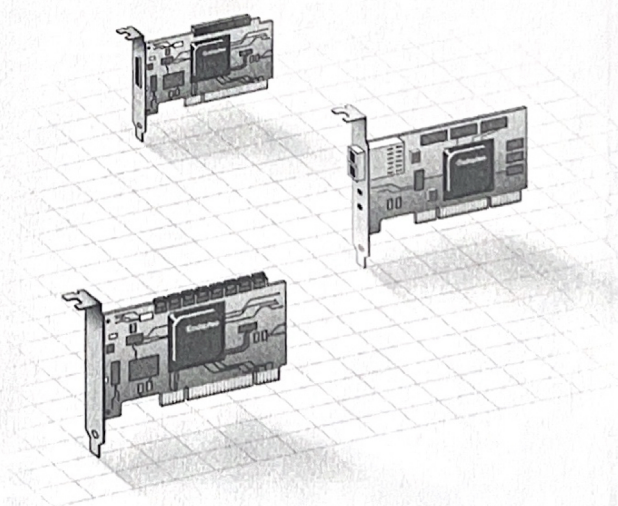## Quick Start Guide

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Adaptec SCSI Card 29320LPE
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Introduction

The Adaptec SCSI 29320LPE enables you to connect up to 15 SCSI devices—such as very large arrays of high-performance hard disk drives, external storage subsystems, Ultra320 and Ultra160 disk drives, tape drives, and CD drives—to any computer with a PCIe (PCI Express) expansion slot.

The Adaptec SCSI 29320LPE is a single channel SCSI card with a maximum throughput of 320 MB/sec. You can connect Ultra320, Ultra 160, and Ultra2 SCSI devices to the internal 68-pin Low Voltage Differential (LVD) connector and the external Very High-Density Cable Interconnect (VHDCI) connector.

Note: For the best data I/O performance, Adaptec recommends that you keep your Low Voltage Differential (LVD) and non-LVD/SE devices separate. (LVD devices means Ultra320, Ultra160, and Ultra2 SCSI devices and non-LVD are Fast SCSI or Ultra SCSI devices.)

For the latest information about the products described in this *Guide*, the support for operating systems listed, and to download drivers, visit www.adaptec.com.

Kit Contents

✔ Adaptec SCSI 29320LPE card with full-size bracket

✔ Embedded in the SCSI card's BIOS is the SCSI*Select* Utility—Used to view and modify your SCSI card and disk drive settings

✔ Installation CD

✔ Drivers for the Adaptec SCSI 29320LPE card

✔ Product documentation for the Adaptec SCSI 29320LPE card

✔ Readme Files

✔ SCSI cable:

- 1 internal 68-pin high-density LVD cable with 6 positions and terminator

✔ Low-profile bracket

✔ Adaptec SCSI 29320LPE card Quick Start Guide (printed)

Step 1 Install the SCSI Card

⚠️ **Caution:** Electrostatic Discharge (ESD) can damage your SCSI card. Handle the SCSI card carefully so that you do not expose it to static charge.

a If you have a low-profile computer cabinet, replace the original full-height bracket on the card with the low-profile bracket supplied in the kit.

b Turn off your computer and disconnect the power cord.

c Open the system cabinet.

d Insert the SCSI card into an available PCIe slot and secure the SCSI card bracket to the chassis. (The expansion slot must be compliant with PCIe rev. 1.0.).

e Install and connect any internal drives using the appropriate cable(s), then close the computer cabinet.

Note: If you connect non-LVD/SE (Wide Ultra/Ultra) SCSI devices to the same SCSI channel as LVD (Ultra320, Ultra160 and Ultra2) SCSI devices, the data transfer rate for the LVD SCSI devices will drop to non-LVD/SE performance levels. To achieve maximum data transfer rates for the LVD SCSI devices, be sure to keep them separate.

Step 2 Setting up SCSI Devices

There are several things you may need to do to your SCSI devices before you connect them to the Adaptec SCSI 29320LPE:

- Check the SCSI IDs
- Check the termination
- Connect SCSI Devices
- Install the SCSI Card Drivers

Since setup can vary from device to device, always refer to the SCSI device's documentation for specific instructions.

Step 3   Check the SCSI IDs

Following are some guidelines for setting SCSI IDs and termination on your SCSI devices.

The Adaptec SCSI 29320LPE and each SCSI device you connect to it must have a unique SCSI ID number ranging from 0 to 15 on each channel. No two SCSI devices on the same SCSI channel can have the same SCSI ID.

The Adaptec SCSI 29320LPE is preset to ID 7 for each channel and should not be changed. If you boot from a SCSI disk drive, make sure the disk drive's SCSI ID is set to 0. (Most SCSI disk drives are preset to SCSI ID 0 at the factory.) The SCSI IDs for internal devices are usually set with jumpers; SCSI IDs for external devices are usually set with a switch on the back of the device.

Step 4   Terminate the Ends

To ensure reliable communication on the SCSI bus, the device at the end of each cable, or the end of the cable itself, must have a terminator installed (or enabled). Terminators must be removed, or termination must be disabled, on devices between the ends of each cable.

When connecting LVD (Ultra320, Ultra160, or Ultra2) SCSI devices, the SCSI bus must be terminated either on the end of the cable (with a permanent terminator) or with a separate terminating connector. Ultra SCSI and earlier single-ended devices can terminate the bus directly from the device. If you use an Ultra SCSI terminator on an LVD SCSI bus, the SCSI devices will not operate properly. For this reason be sure that you have the necessary LVD cable and terminator before installing LVD SCSI devices.

The last SCSI device on the end of each SCSI bus cable must be terminated, and termination must be disabled for all other devices in the middle of the cables. LVD SCSI devices are automatically unterminated, but non-LVD/SE SCSI devices do have termination that you must check. For more information, refer to the documentation for each SCSI device.

If you are using external LVD (Ultra320, Ultra160, or Ultra2) SCSI devices, be sure to use an LVD terminator to terminate the last device in the chain. If you use a single-ended, active terminator (sometimes called an Ultra terminator) the SCSI devices will not operate properly.

Step 5   Connecting SCSI Devices

You can connect a total of 15 SCSI devices to the Adaptec SCSI 29320LPE. Before connecting the devices, be sure to review *Setting up SCSI Devices* on page 2.

Connecting Internal LVD (Ultra320, Ultra160 or Ultra2) SCSI Devices

A special 68-pin internal LVD cable is needed to connect internal LVD SCSI devices. If your cables are not marked, you can identify most LVD cables as having twisted pairs of the flat ribbon cable between the device connectors. Some cables are laminated so that they lay flat. Internal LVD cables usually have a terminator built into the end of the cable. For more information, refer to the *Adaptec SCSI 29320LPE Installation and User's Guide*.

The Adaptec SCSI 29320LPE has one internal LVD connector to which you can connect internal SCSI devices.

Adaptec recommends that you keep your LVD (Ultra320, Ultra160 or Ultra2) SCSI devices separate from your Ultra SCSI devices. If you connect a legacy SCSI disk drive to the Adaptec SCSI 29320LPE LVD connector, the Ultra320, Ultra160, or Ultra2 SCSI device will slow to Ultra SCSI performance levels.

Follow these steps to connect your internal LVD (Ultra320, Ultra160 or Ultra2) and Ultra2 SCSI devices:

a   Locate a 68-pin internal LVD SCSI cable.

b   Plug the nonterminated end of the cable to the internal LVD connector.

c   Plug the internal LVD SCSI device(s) to the other cable connector(s), starting with the connector at the terminated end of the cable.

   Note: Internal LVD SCSI devices come from the factory with termination disabled and cannot be changed. Proper termination is provided by the terminator at the end of the LVD SCSI cable.

d   Connect a power cable from your computer's internal power supply to each internal SCSI device.

Connecting External SCSI Devices

You can connect external LVD SCSI devices to the 68-pin external VHDCI SCSI connector. Each external device will require a 68-pin VHDCI external LVD SCSI cable.

Note: To achieve maximum data transfer rates, do not combine older non-LVD/SE devices with the newer Ultra320, Ultra160, or Ultra2 SCSI devices on the same SCSI channel of the Adaptec SCSI 29320LPE.

a Connect one end of an external SCSI cable to the external VHDCI connector on the Adaptec SCSI 29320LPE.

b Connect the other end of the cable to a SCSI connector on the back of an external device. If you are installing only one external device, terminate the device and skip to Step 4.

c Connect the other external SCSI devices by linking each device to the previous one. Terminate only the device at the end of the chain.

d Connect power cables to all external device(s) and to the computer.

Step 6   Creating a Driver Disk

Before you can apply a driver to your operating system installation, you will need to create a driver disk. To create the driver disk:

a Within Windows, insert the Adaptec SCSI CD. The Main Menu will open.

b Click **Create Driver Disk** from the Main Menu.

c Select one of the operating systems from this list:

- Windows
- Linux
- Netware

d Select the type of operating system you want to use.

e Select the version of the operating system.

f When prompted, insert the floppy disk, then click **OK**.

g The system creates the driver disk.

h Remove and label the driver disk.

i Continue with the installation of the operating system and SCSI card driver, as described Step 7 on page 6.

Note: If your computer already has an operating system installed, refer to the *Adaptec SCSI 29320LPE Installation and User's Guide* on the Installation CD.

Step 7   Installing the SCSI Card Drivers

Windows

a   Insert your Windows CD, then restart the computer.

b   Follow the on-screen instructions to begin the Windows installation.

c   When prompted to install a third-party driver, press F6.

   Note: When F6 is active, a prompt appears at the bottom of the screen for only 5 seconds. If you miss your chance to press F6, restart your computer.

d   Insert the driver disk, then wait until prompted to install the driver. Press **S** to specify that the driver is on the floppy disk, then press **Enter**. The computer reads the disk.

e   When the driver is found, press **Enter**. Follow the on-screen instructions to complete the installation.

Red Hat Linux

For SUSE Linux, refer to the *Adaptec SCSI 29320LPE Installation and User's Guide* on the Installation CD.
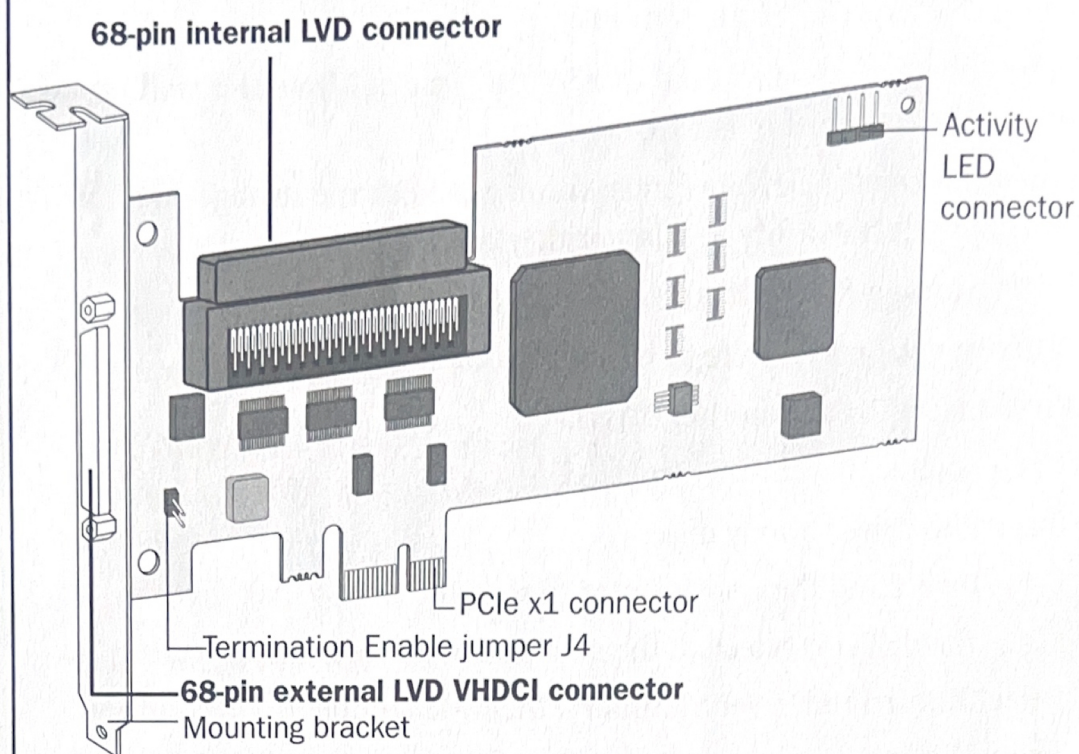
Note: For the most up-to-date information on Linux support, visit www.adaptec.com.

a   Insert the first Red Hat installation CD.

b   Restart the computer.

c   When the Red Hat Welcome screen appears, type `linux dd` at the Boot: prompt.

d   When prompted, insert the driver disk, then select **OK**.

e   Follow the prompts to set up the environment you want.

f   If you are installing other third-party devices, install them now. Otherwise, select **Done**.

g   Continue with the Linux installation, according to the Red Hat instructions.

NetWare

a Restart your computer, then install NetWare. (For instructions, refer to your NetWare documentation).

b To be able to load additional drivers later, select **Manual install mode** during the first part of the installation.

c When the Device Drivers screen displays, check the storage adapters list, then select **Modify** to add another driver.

d Select **Storage Adapters**, then press **Enter**.

e If necessary, press **Delete** to remove the default SCSI driver.

f Press **Insert** to add another driver.

   The available drivers are displayed.

g Insert the driver floppy disk.

h Press **Insert** and then press **Enter** to scan the floppy disk drive.

   Once the driver is selected, the new device driver is displayed.

i Select **Return to Driver Summary**, then press **Enter**.

j From the lower window menu, select **Continue**, then press **Enter**.

k Follow the instructions in the NetWare manual to complete the installation.

Adaptec SCSI 29320LPE

68-pin internal LVD connector

Activity
LED
connector

PCIe x1 connector

Termination Enable jumper J4

68-pin external LVD VHDCI connector

Mounting bracket